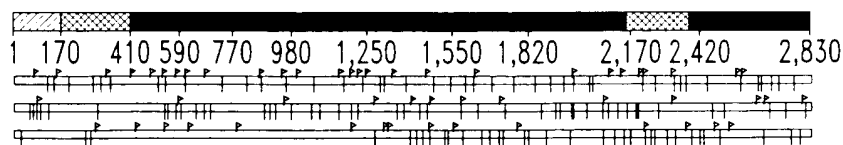


Fig. 1A



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GCTTGTCTCCTCCTGGGACACGTCCGTGCGTCTCTACGATGTGCCGGCCAACTCC
ATGCGGCTCAAGTACCAGCACACCGGCGCGTCTTGACTGCGCCTTCTACGAT
CCAACGCATGCCTGGAGTGGAGGACTAGATCATCAATTGAAAAATGCATGATT
TGAACACTGATCAAGAAAAATCTTGTGGGACCCATGATGCCCCATCAGATGT
GTTGAATACTGTCCAGAAGTGAATGTGATGGTCACTGGAAGTTGGGATCAGA
CAGTTAAACTGTGGGATCCCAAGTCCCTTGTAAATGCTGGGACCTTCTCTCAGC
CTGAAAAGGTATATACCTCTCAGTGTCTGGAGACCGGCTGATTGTGGGAACA
GCAGGCCGCAGAGTGTGGTGTGGGACTTACGGAACATGGGTTACGTGCAGCA
GCGCAGGGAGTCCAGCCTGAAATACAGACTCGCTGCATACGAGCGTTTCCAA
ACAAGCAGGGTTATGTATTAAGCTCTATTGAAGGCCGAGTGGCAGTTGAGTA
TTTGGACCCAAGCCCTGAGGTACAGAAGAAGAAGTATGCCTTCAAAATGTCAC
AGACTAAAAGAAAAATAATATTGAGCAGATTTACCCAGTCAATGCCATTTCTT
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ATTTGGGATCCATTTAACAAAAAGCGACTGTGCCAATTCATCGGTACCCAC
GAGCATCGCATCACTTGCCCTTCAGTAATGATGGGACTACGCTTGCAATAGCGT
CATCATATATGTATGAAATGGATGACACAGAACATCCTGAAGATGGTATCTT
CATTTCGCCAAGTGACAGATGCAGAAACAAAACCCAAGTCACCATGTACTTGA
CAAGATTTTCACTTAAAGTGCCATGTTGATGATAATAAAACAAATCGTAC
TCCCCAATGGTGGATTTATTACTATTAAGAAACCAGGGAAAAATATTAATTT
TAATATTATAACAACCTGAAAAATAATGGAAAAAGAGGTTTTTGAATTTTTTT
TTTAAATAAACACCTTCTTAAGTGCATGAGATGGTTTGATGGTTTGCTGCATT
AAAGGTATTTGGGCAACAAAAATGGAGGGCAAGTGACTGCAGTTTTGAGA
ATCAGTTTTGACCTTGATGATTTTTTGTTCCTACTGTGGAAATAAATGTTTGTA
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CTCTGAGTAGGACTTGGACCTTTCTGAGATTTATTTTATCCGTGATGTATTTT
TTTTAATTTCTTTTGATACAGAGAAGGGTCTTTTTTTTTTTAAGTATTTCAAGTA
AACTTGGTGTAAAGTCTGAACCCATCTTTGAAATGTATTTCTTCATTGCAG

Fig. 1B

GTCCACCTAATCATCCTGTGAAAGTGGTTTCTCTATGGAAAGCTTTGTTTGCTT
 CCTACAAATACATGCTTATTCCTTAAGGGATGTGTTAGAGTTACTGTGGATTT
 CTCTGTTTTCTGTCTTACAAGAACTTGTCTATGTACCTTAATACTTTGTTTAG
 GATGAGGAGTCTTTGTGTCCCTGTACAGTAGTCTGACGTATTTCCCTTCTGTC
 CCCTAGTAAGCCCAGTTGCTGTATCTGAACAGTTTGAGCTCTTTTTGTAATATA
 CTCTAAACCTGTTATTTCTGTGCTAATAAACGAGATGCAGAACCCCTGAAAA
 AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Fig. 1B
 (Continued)

Alignment of predicted *huBUB3* gene products from ~1.4 Kb cDNA and ~2.7 Kb cDNA

	20	40	60
huBUB3 2.7	MTGSNEFKLNQPPEDGISSVKFSPNTSQFLLVSSWDTSVRLYDVPANSMRLKYQHTGAVL		
huBUB3 1.4	MTGSNEFKLNQPPEDGISSVKFSPNTSQFLLVSSWDTSVRLYDVPANSMRLKYQHTGAVL		
	80	100	120
huBUB3 2.7	DCAFYDPTHAWSSGLDHQLKMHDLNTDQENLVGTHDAIRCVEYCPEVNMVMTGSWDQTV		
huBUB3 1.4	DCAFYDPTHAWSSGLDHQLKMHDLNTDQENLVGTHDAIRCVEYCPEVNMVMTGSWDQTV		
	140	160	180
huBUB3 2.7	KLWDPRTPCNAGTFSQPEKVYTLVSGDRLIVGTAGRRVLVWDLRNMGYVQQRRESSLKY		
huBUB3 1.4	KLWDPRTPCNAGTFSQPEKVYTLVSGDRLIVGTAGRRVLVWDLRNMGYVQQRRESSLKY		
	200	220	240
huBUB3 2.7	QTRCIRAFPNKQGYVLSSIEGRVAVEYLDPSPEVQKKKYAFKCHRLKENNIEQIYPVNAI		
huBUB3 1.4	QTRCIRAFPNKQGYVLSSIEGRVAVEYLDPSPEVQKKKYAFKCHRLKENNIEQIYPVNAI		
	260	280	300
huBUB3 2.7	SFHNIHNTFATGGSDGFVNIWDPFNKKRLCQFHRYPTSIASLAFSNDGTTLAIASSMYE		
huBUB3 1.4	SFHNIHNTFATGGSDGFVNIWDPFNKKRLCQFHRYPTSIASLAFSNDGTTLAIASSMYE		
	320		
huBUB3 2.7	MDDTEHPEDGIFIRQVTDKETPKSPCT		
huBUB3 1.4	MDDTEHPEDGIFIRQVTDKETPKVHLIIL		

Fig. 2

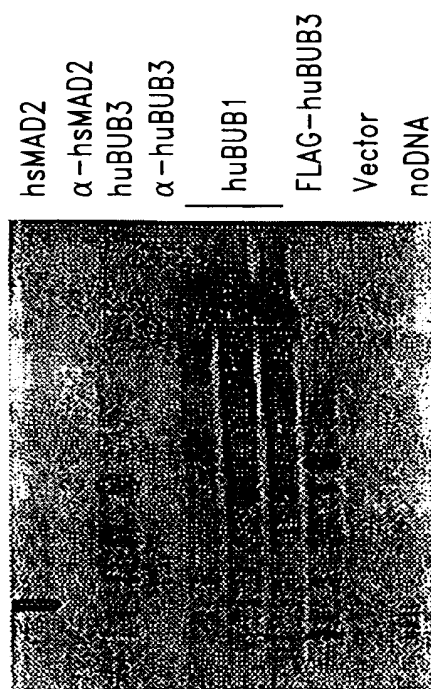
scBUB3	1	-----MQIVQIEQAPKDYISDIKIIP---SKSLLL	27
muBUB3	1	-----MTG-----SNEFKLNQPPEDGISSVKFSPN--TSQFLL	31
huBUB3	1	-----MTG-----SNEFKLNQPPEDGISSVKFSPN--TSQFLL	31
rae1-hu	1	MSLFGTTSGFGTSGTSMFGSATT--DNHNPMDIEVTSSPDDSIGCLSFSPPTLPGNFLI	58
rae1	1	MSLFG-----QATTSTVSNATG-----DLKKDVEVAQPPEDSISDLAFSP---QAEYLA	46
yet7	1	MSFFNR-----SNTTSALGTSTAMANEKDLANDIVINSPAEDSISDIAFSP---QQDFMF	52
		. D I . P	
scBUB3	28	-----I-----II----- -ITSWDGSLTVYKFDIQAKNVDLLQSLRYKH--PLLCCNFI-DNTDLQIYVGTVQGEILK	83
muBUB3	32	-VSSWDT--SVRLYDVPA--NSM-R-LKYQHTGAVLDCAFY-DPT--HAWSGGLDHQLKM	81
huBUB3	32	-VSSWDT--SVRLYDVPA--NSM-R-LKYQHTGAVLDCAFY-DPT--HAWSGGLDHQLKM	81
rae1-hu	59	-AGSWAN--DVRCWEVQDSGQTIPK-AQQMHTGPVLDVCWSDDGS--KVFTASCDKTAKM	112
rae1	47	-ASSWDS--KVRIYEVQATGQSIGK-ALYEHQGPVLSVNWSRDGT--KVASGSVDKSAKV	100
yet7	53	SASSWDG--KVRIWDVQN-GVPQGR-AQHESSPVLCTRWSNDGT--KVASGGCDNALKL	106
		SW V . . . L D . .	
scBUB3	84	-----III----- VDLIGSPSFQALTNNEANLGICRICKYGD--DKLIAASWDGLIEVIDPRNYGDGVIKVN	141
muBUB3	82	HDLNTDQENLVGTHDAPIRCVEYCPEVNV----MVTGSWDQTVKLWDPR-TPCNAGTFS-	135
huBUB3	82	HDLNTDQENLVGTHDAPIRCVEYCPEVNV----MVTGSWDQTVKLWDPR-TPCNAGTFS-	135
rae1-hu	113	WDLSSNQAIQIAQHDAPVKTIHWIKAPNY--SCVMTGSWDKTLKFWDTR-SSNPMVLQ-	168
rae1	101	FDIQTGQNQQVAAHDDAVRCVRFVEAMGT-SPILATGSWDKTLKYWDLR-QSTPIATVS-	157
yet7	107	YDIASGQTQQIGMHSAPIKVLRFVQCGPSNTECIVTGSWDKTIKYWDMR-QPQPVSTVM-	164
		D. SWD . . D R	
scBUB3	142	-----IV----- LNSNNTKVKNKIFTMDTSSRLIVGMNNSQVQWFRPLCEDDNGTIEESGLKYQIRDVAL	201
muBUB3	136	Q-----PEKVYTLVSVSGDRLIVGTAGRRVLVWDLWNMGYVQQRRE-SSLKYQTRCIRA	187
huBUB3	136	Q-----PEKVYTLVSVSGDRLIVGTAGRRVLVWDLRNMGYVQQRRE-SSLKYQTRCIRA	187
rae1-hu	169	L-----PERCYCADVIYPMVAVATAERGLIVYQLENQPSFRRRIE-SPLKHQHRCAI	220
rae1	158	L-----PERVYAMDCVHPLLTAVATAERNICVINLSEPTKIFKLAM-SPLKFQTRSLAC	209
yet7	165	M-----PERVYSMDNKQSLLVATAERHIAIINLANPTTIFKATT-SPLKWQTRCVAC	216
		. . . V . . L S L K Q R .	

Fig. 3A

— V —			
scBUB3	202	LP---KEQEGYACSSIDGRVAVEFFDDQGGDDYNSSKRFAFRCHRLNLKD-TNL-----	250
muBUB3	188	FP---NK-QGYVLSSIEGRVAVEYLDPS-PEV-QKKKYAFKCHRLKENN-IEQ-----	233
huBUB3	188	FP---NK-QGYVLSSIEGRVAVEYLDPS-PEV-QKKKYAFKCHRLKENN-IEQ-----	233
rae1-hu	221	FKDKQNKPTGFALGSIEGRVAIHYNPP-NP--AKDNFTFKCHRSNGTNTSAP-----QD	272
rae1	210	F----IKGDGYAIGSVEGRCAIQNIDE--KN--ASQNFSTRCHRNQAGN-SAD-----	253
yet7	217	Y----NEADGYAIGSVEGRCSIRYIDDG-MQ--KKSQFSFKCHRQTNPN-RAPGSNGQSL	268
G. S..GRF.CHR			
— VI —			
scBUB3	251	AYPVNSIEFSPRHKFLYTAGSDGIISCWNLQTRKKIKNFAKFNED-SVVKIACSDNILCL	309
muBUB3	234	IYPVNAISFHNHNTFATGGSDGFVNIWDPFNKKRLCQFHYPTSIASLAFSNDGTTLAI	293
huBUB3	234	IYPVNAISFHNHNTFATGGSDGFVNIWDPFNKKRLCQFHYPTSIASLAFSNDGTTLAI	293
rae1-hu	273	IYAVNGIAFHPVHGTLATVGS DGRFSFWKDARTKLKTSEQLDQPI SACCFNHNGNIFAY	332
rae1	254	VYSVNSIAFHPQYGTFTAGSDGTFSFWKDSHQRLKSYPNVGGTISCSTFNRTGDIFAY	313
yet7	269	VYPVNSIAFHPLYGTFTVTAGGDGTFFW DKNQRHRLKGYPTLQASIPVCSFNRNGSVFAY	328
Y VN I F T G DG W . . .			
scBUB3	310	ATSDDTFKTNA AIDQTIELNASSIYIIFDYEN-----	341
muBUB3	294	ASSYMYEMDDT-EHPE---DGIFIRQVTD AETPKPS---T	326
huBUB3	294	ASSYMYEMDDT-EHPE---DGIFIRQVTD AETPKPSPC-T	328
rae1-hu	333	ASSYDWSKGHEFYNPQKK-NYIFLRNA-AEELKPRNKK--	368
rae1	314	AISYDWSKGYTFNNAQLP-NKIMLHPVPQDEIKPRPKKGR	352
yet7	329	ALSYDWHQGHMGNRPDYP-NVIRLHATTDEEVKEK-KK-R	365
A S . E			

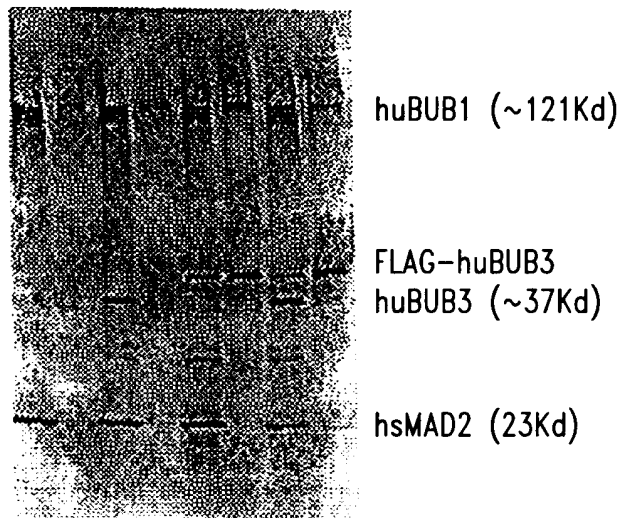
Fig. 3B

Fig. 4A



FLAG-huBUB3	-	-	+	+
huBUB3	-	+	-	+
huBUB1	+	+	+	+
hsMAD2	+	+	+	+
α -FLAG	S	P	S	P

Fig. 4B



mRNA expression of BUB/MAD homologs in various tissues.

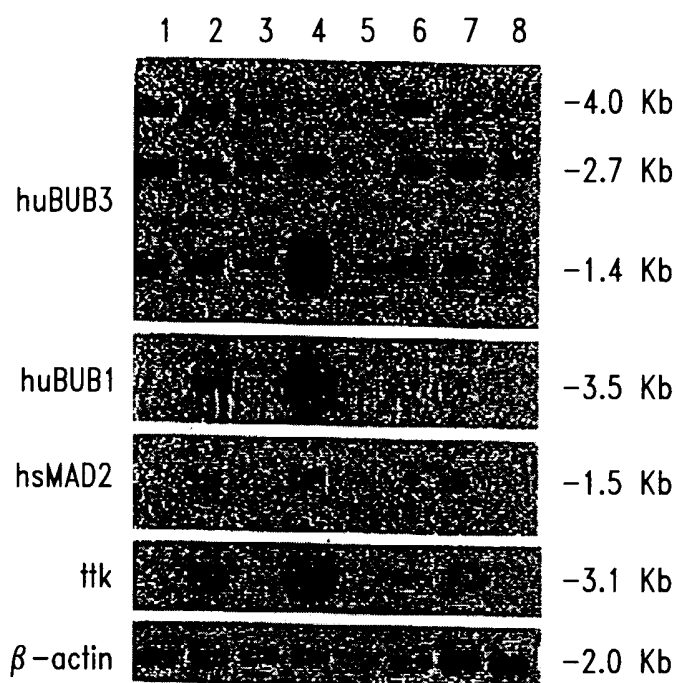


Fig. 5